TranzX PST
Technical Manual

Version 1.6

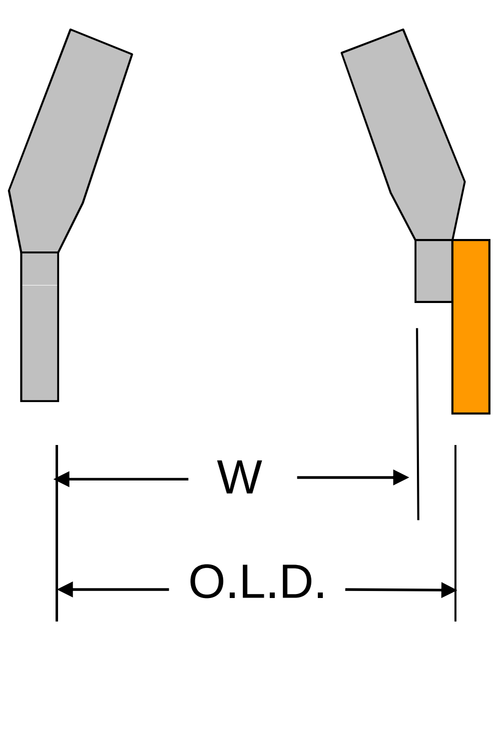
2009/11/17

Contents

Design Specifications

TranzX PST

Shifting	W	O.L.D.
7spd. derailleur w/rear hub motor	160mm	167mm
7spd. derailleur w/front hub motor	132mm	139mm
Inter-8 + Roller brake		
Inter-8 + V-brake		
Inter-8 + Coaster brake		
Inter-7 + Roller brake	132mm	139mm
Inter-7 + V-brake		
Inter-7 + Coaster brake	127mm	134mm

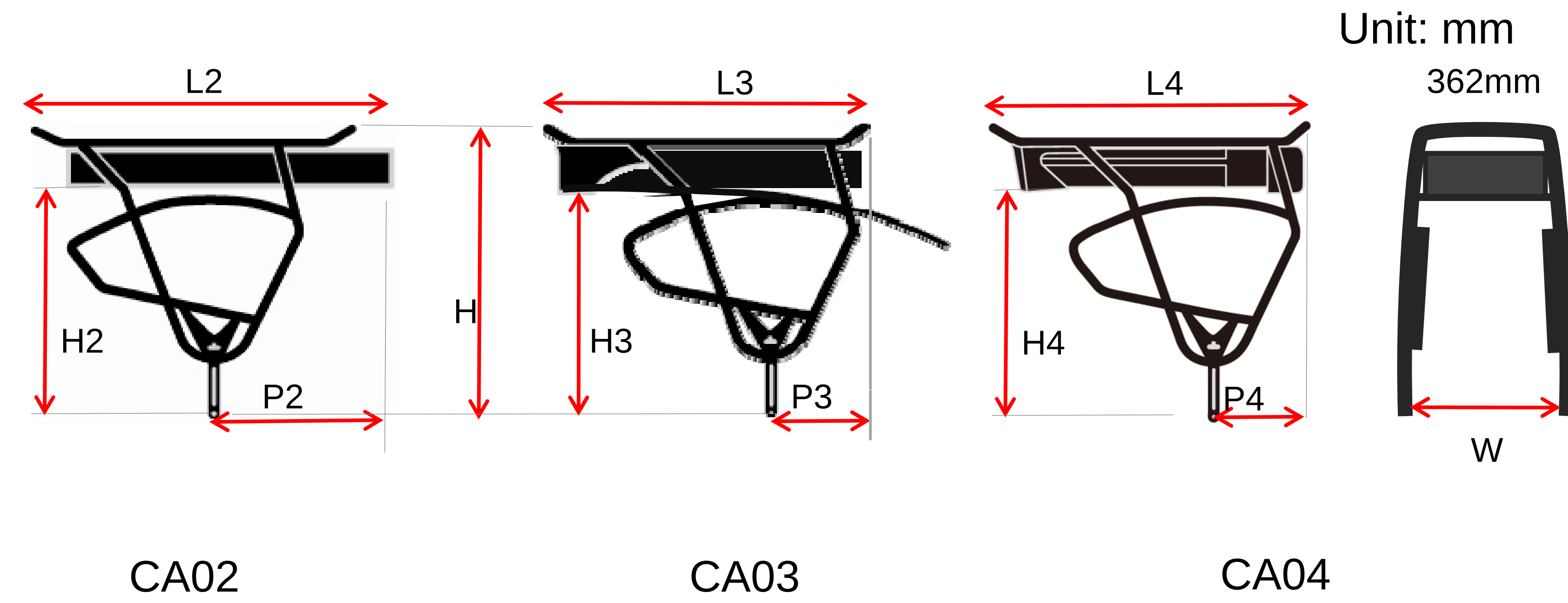


- TMM4

Dimension- Carrier

TranzX PST

Unit: mm



CA02

	L2	P2	H2	H	W
28"	504	227	352	430	184 /159
26"	504	230	330	407	184 /159

CA03

	L3	P3	H3	H	W
28"	495	166	340	434	184 /159
26"	495	166	319	412	184 /159

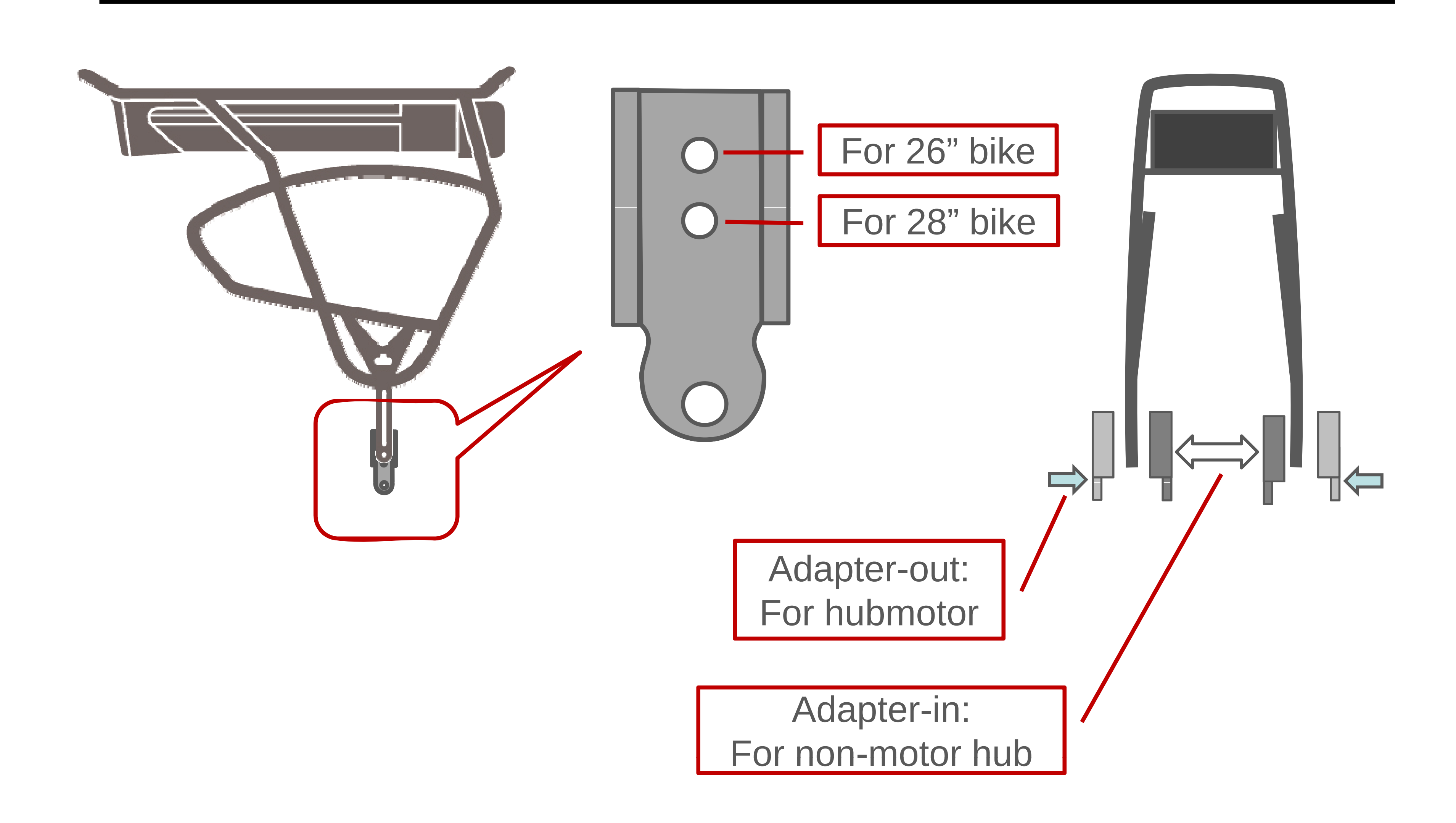
CA04

	L4	P4	H4	H	W
28"	433	153	306	390	147
26"	433	153	306	390	147

- For derailleur shifting, W=184mm; for internal gear hub, W=159mm.

Assembly of Carrier Adapter

TranzX PST



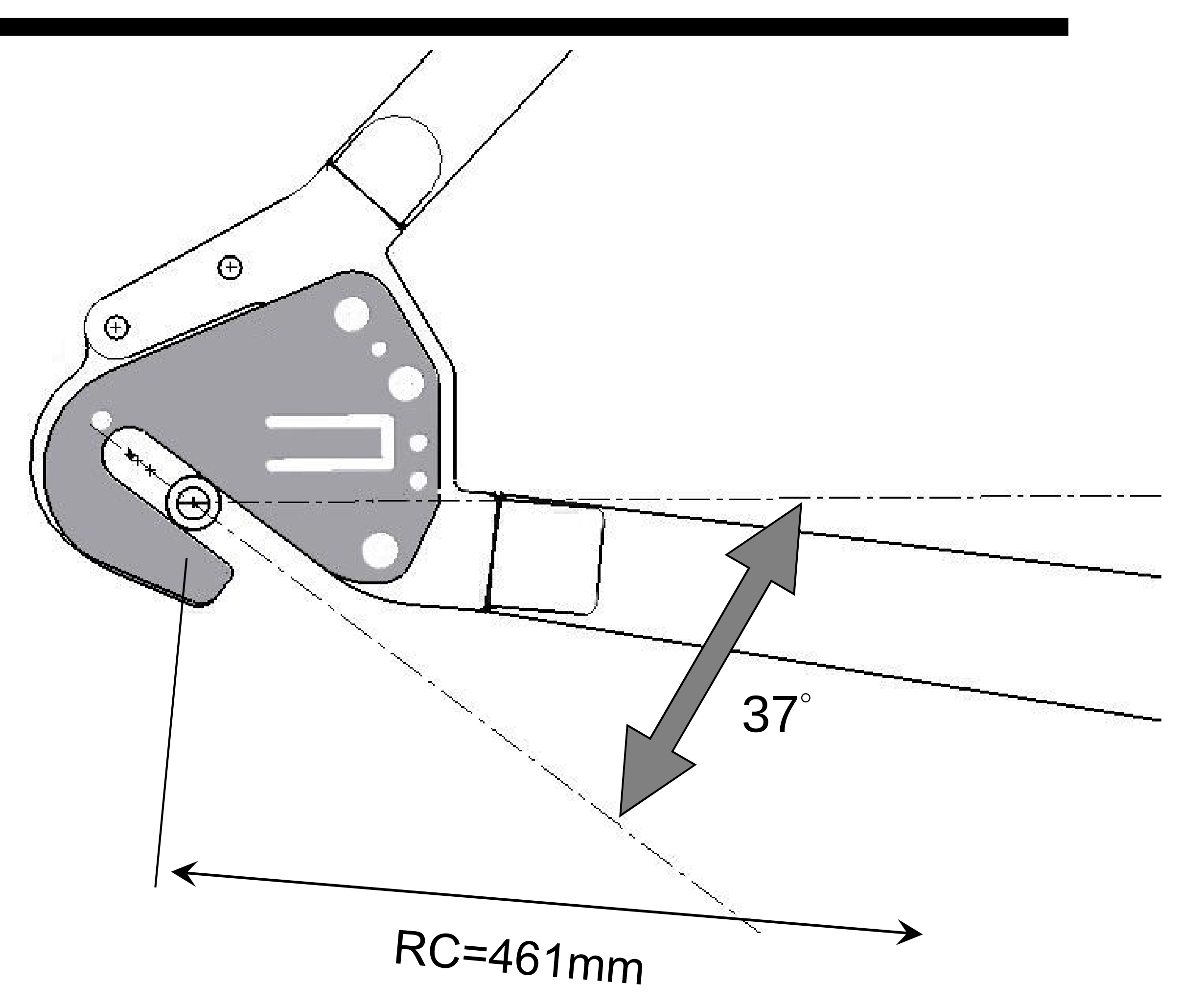
Design Specifications

TMM4 = Torque-Measurement Method in the 4th Generation.

For correct performance, the TMM4 should be placed at the angle shown.

We strongly recommend the following specification for internally geared hubs:

1. Chain wheel : 38T
2. Rear gear: 16T

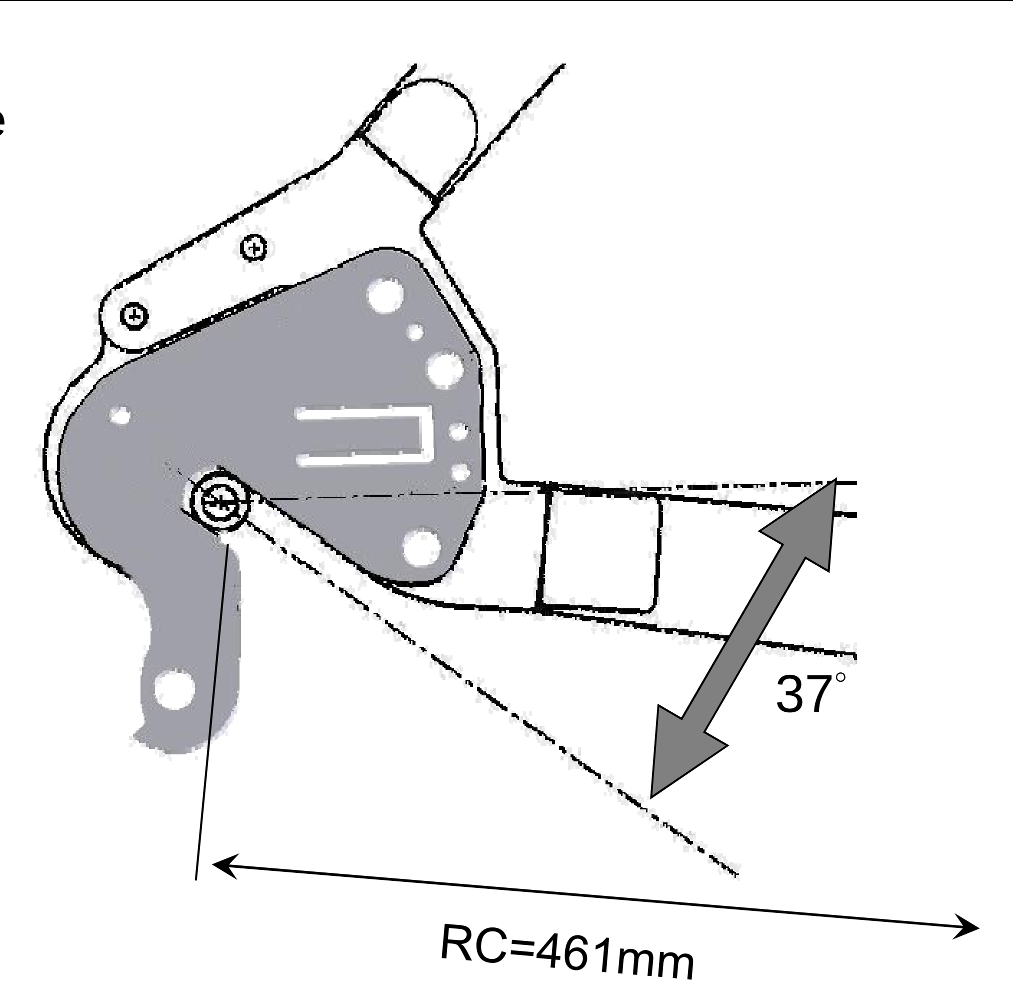


Design Specifications

For correct performance, the TMM4 should be placed at the angle shown.

We strongly recommend the following specification for derailleur shifting.

1. Chain wheel : 42T
2. Rear cogs: 13T~28T



Technical Requirements

■ Rim recommendation

Rims should be double-walled and have 36 holes.
We strongly recommend the use of rims with eyelets.

■ Spoke lacing

Use a wheel with 3X or 4X spoke lacing. Wheel with radial lacing cannot be used because the spokes and the wheel can be damaged when applying the power and noise could be generated.

■ Spoke tension of the hubmotor

The maximum spoke tension should not exceed 120kg-f.

■ Spoke size

Applicable spoke size: 13-14G (2-2,2mm) (50mm Tapered).

Assembly Notes

It is very important that the black lock washer on the drive side is placed on the inside of the TMM4 (please see the diagram on the right).

The washer and flange nut are optional items.

7L Grey

C0170006019

Shimano Internal Gear

Flange nut C0170005211

Internal Assembly

CJ-8S20

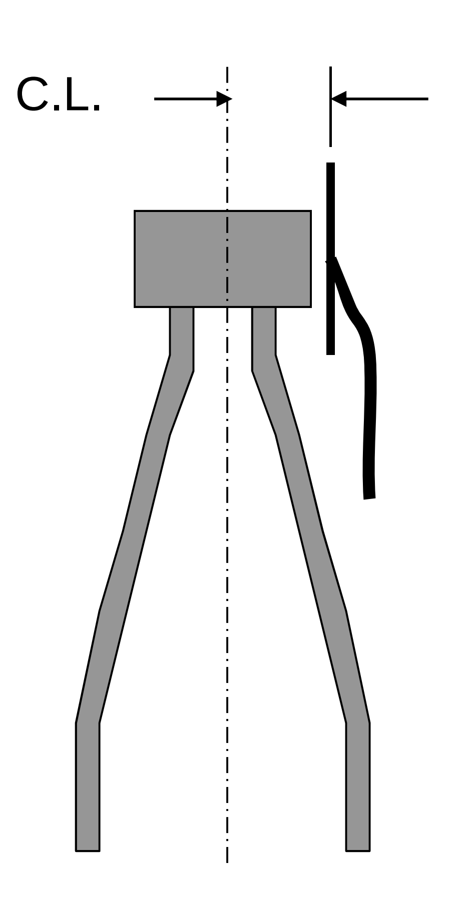
7L Grey

C0170006019

Chain Line

TranzX PST

Hub type	Chain Line
7spd derailleur w/rear hub motor	57.7mm
7spd derailleur w/front hub motor	
Inter-8 w/ Roller brake	47.7mm
Inter-8 w/ V-brake	
Inter-8 w/Coaster brake	
Inter-7 w/ V-brake	45.5mm
Inter-7 w/Coaster brake	45.5mm



Cable Routing

TranzX PST

General information

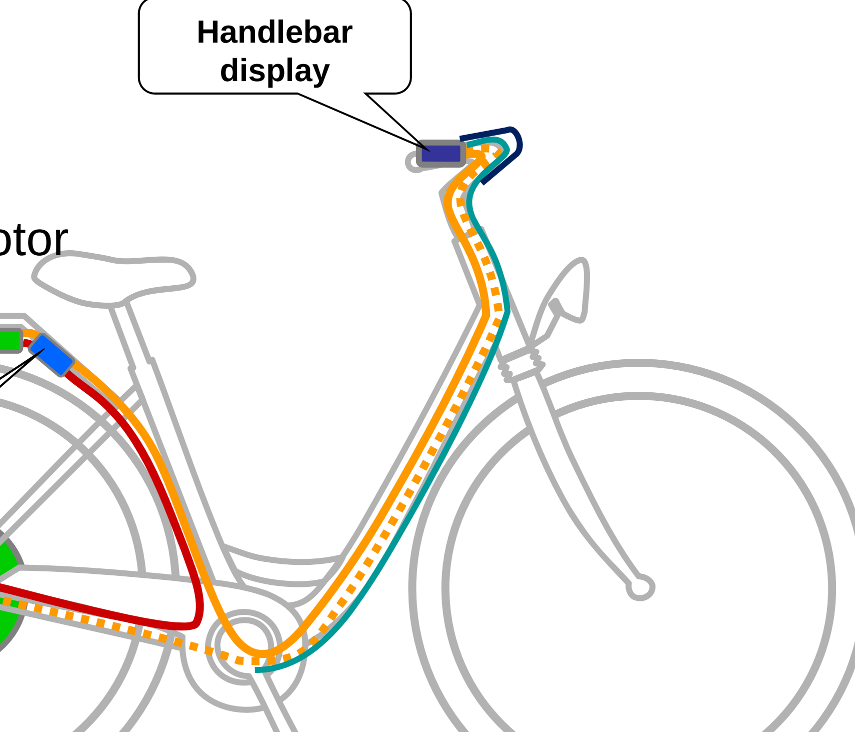
Diameter of the cable from TMM4 to the handlebar display is 4mm.

Diameter of the cable from controller to the handlebar display is 6.5mm.

Diameter of the cable from the hub-motor to the controller is 8.5mm.

Diameter of the cable from the bottom bracket sensor to the controller is 4.5mm.

Diameter of the cable from cut-off brake to display is 3.2mm.

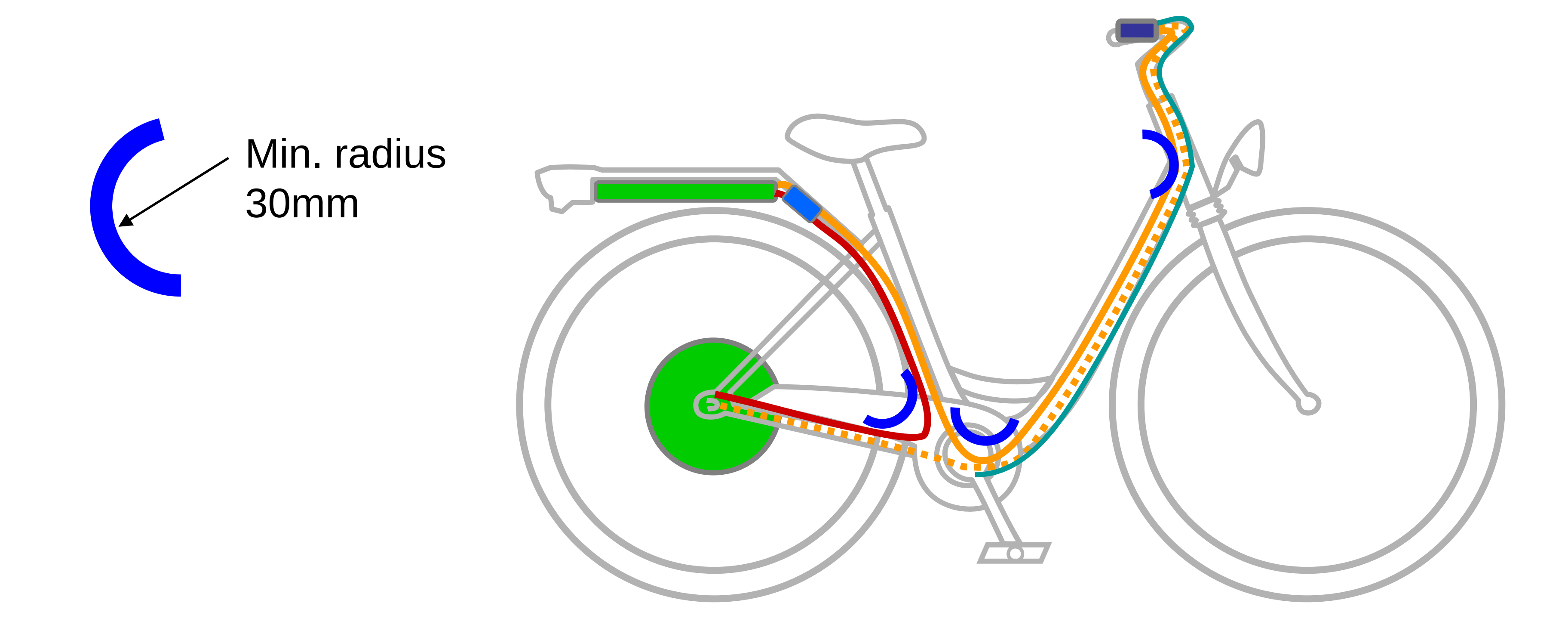


Cable Routing

TranzX PST

General information

The minimum radius of all electric cable bends should not be less than 30mm!

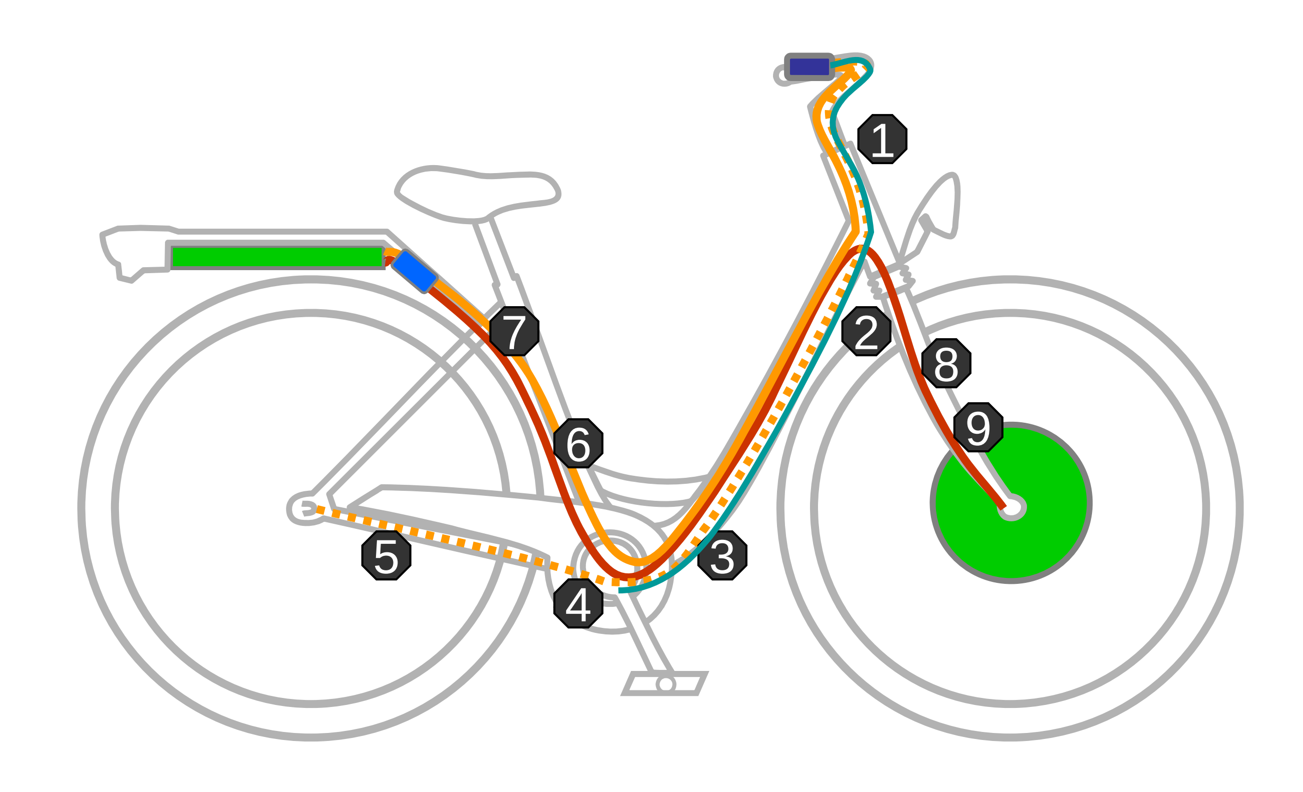


Cable Routing

TranzX PST

Front Hub-Motor Type

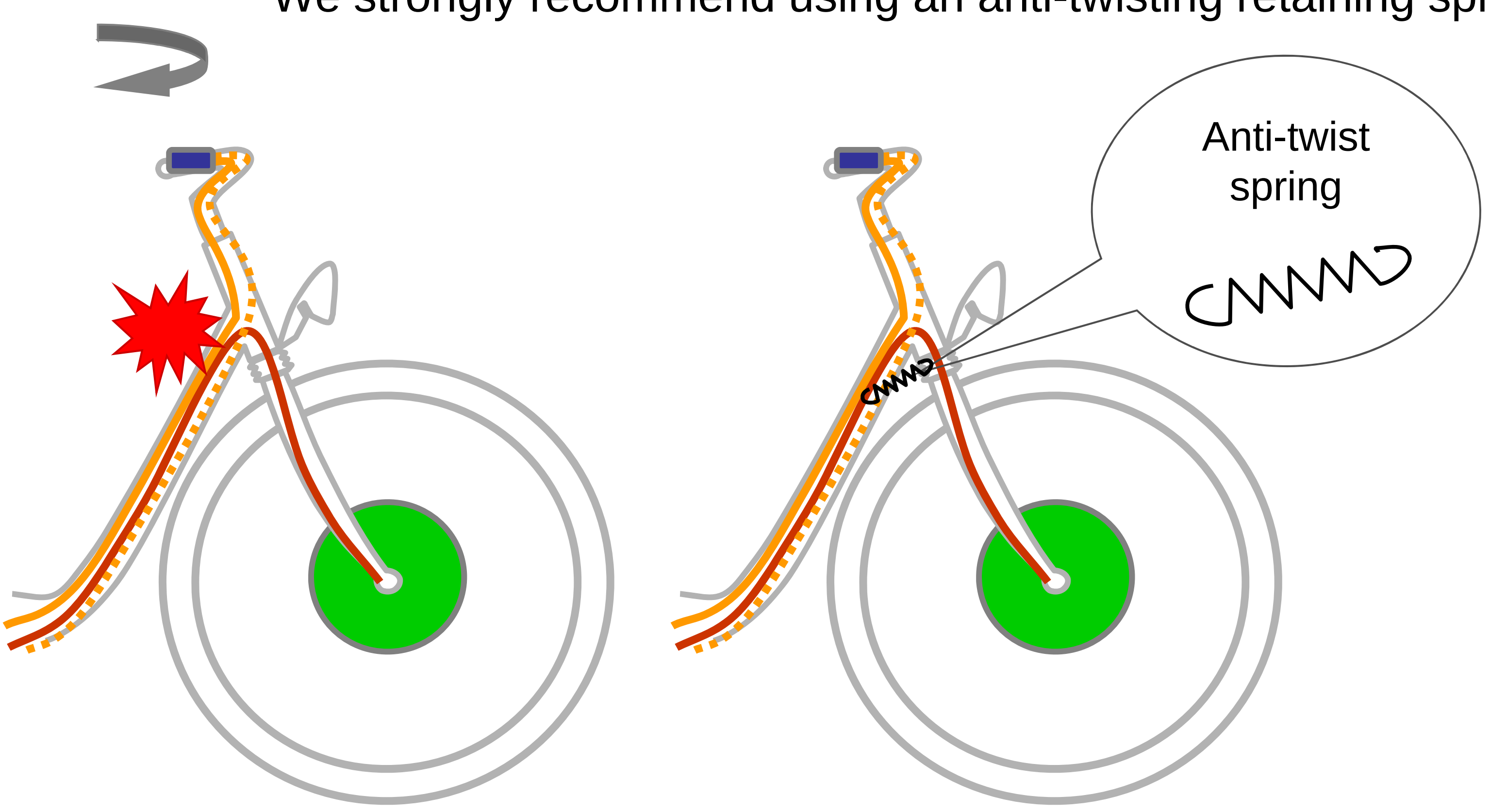
Positions marked 1 thru 9 should be affixed with some type of retaining clip (i.e. cable ties) to ensure safety.



Cable Routing

Front Hub-Motor Type

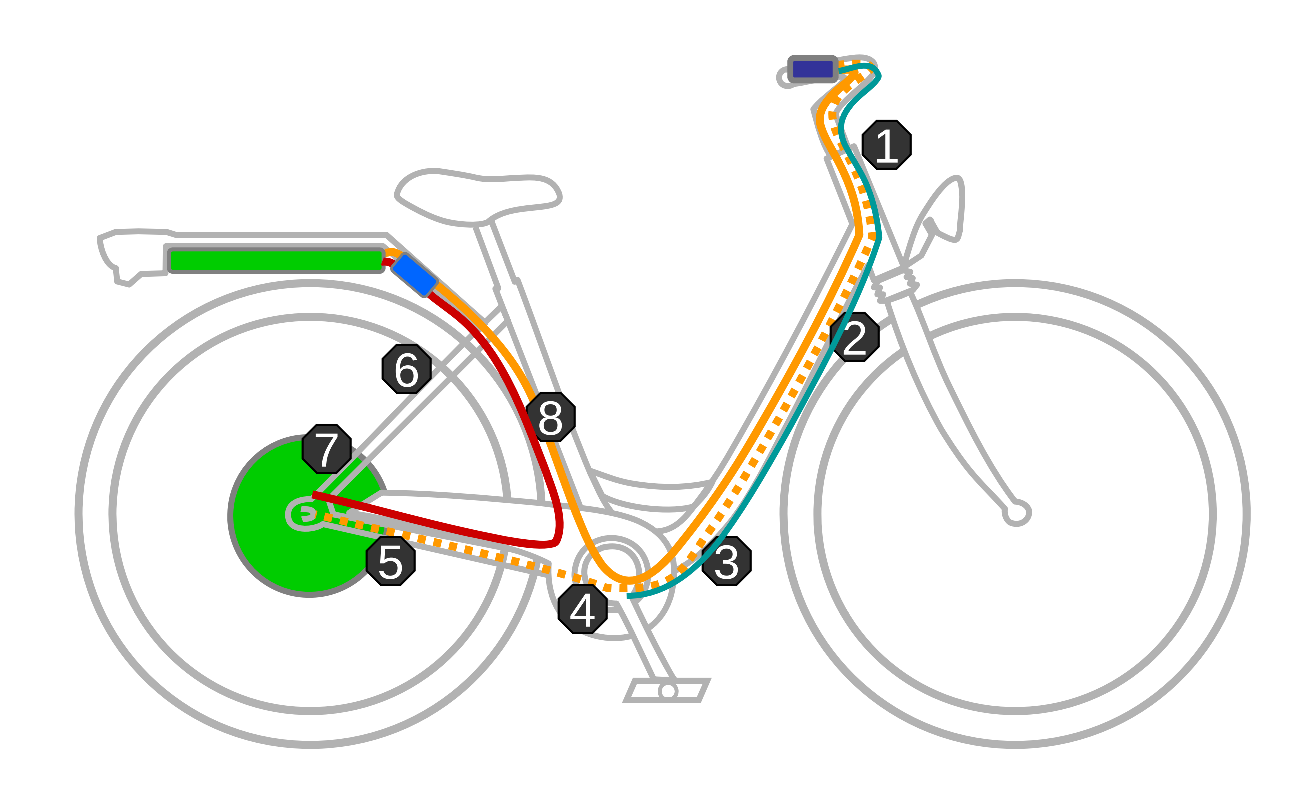
We strongly recommend using an anti-twisting retaining spring.



Cable Routing

Rear Hub-Motor Type

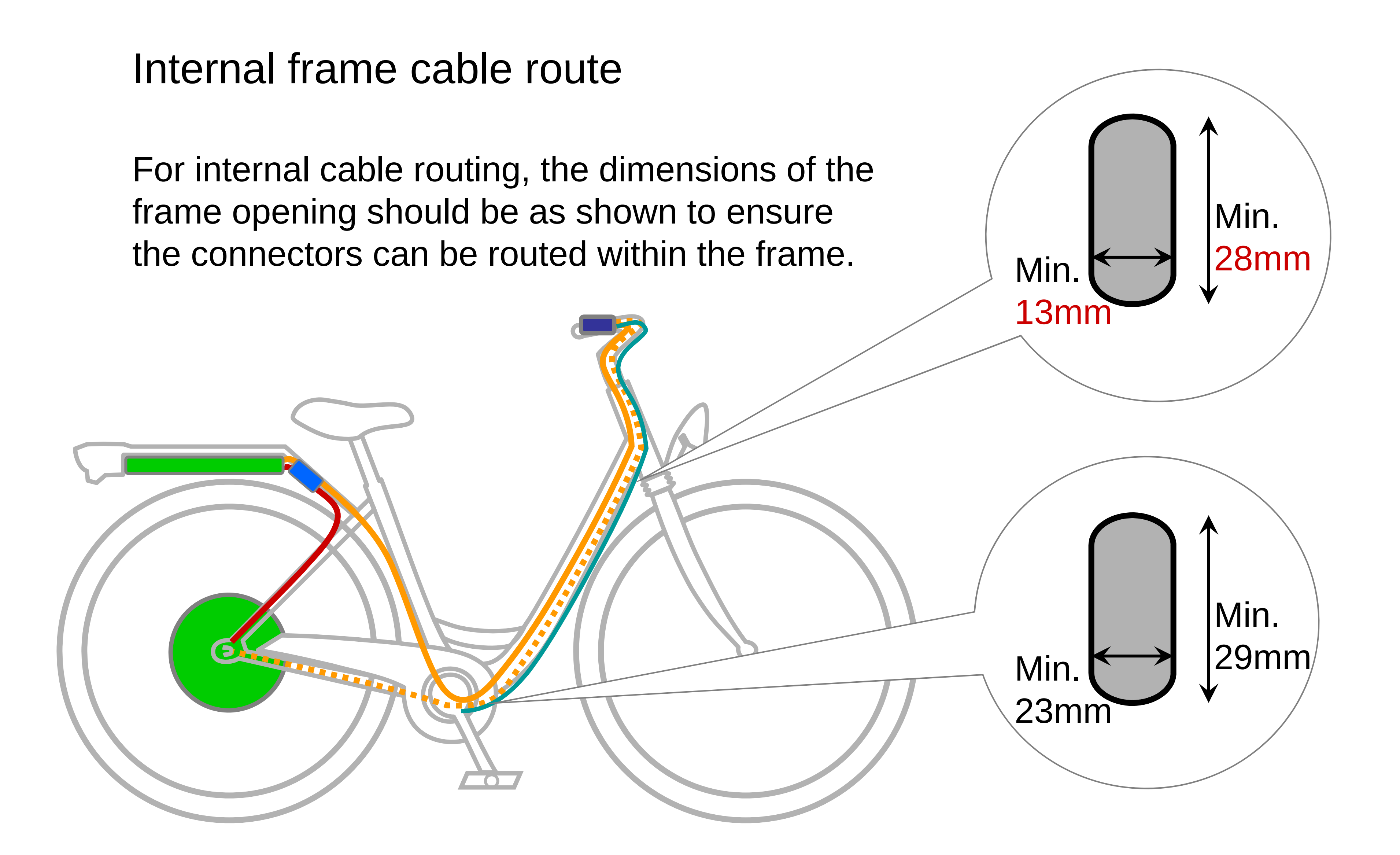
Positions marked 1 thru 8 should be affixed with some type of retaining clips (i.e. cable ties) to ensure safety.



Cable Routing

Internal frame cable route

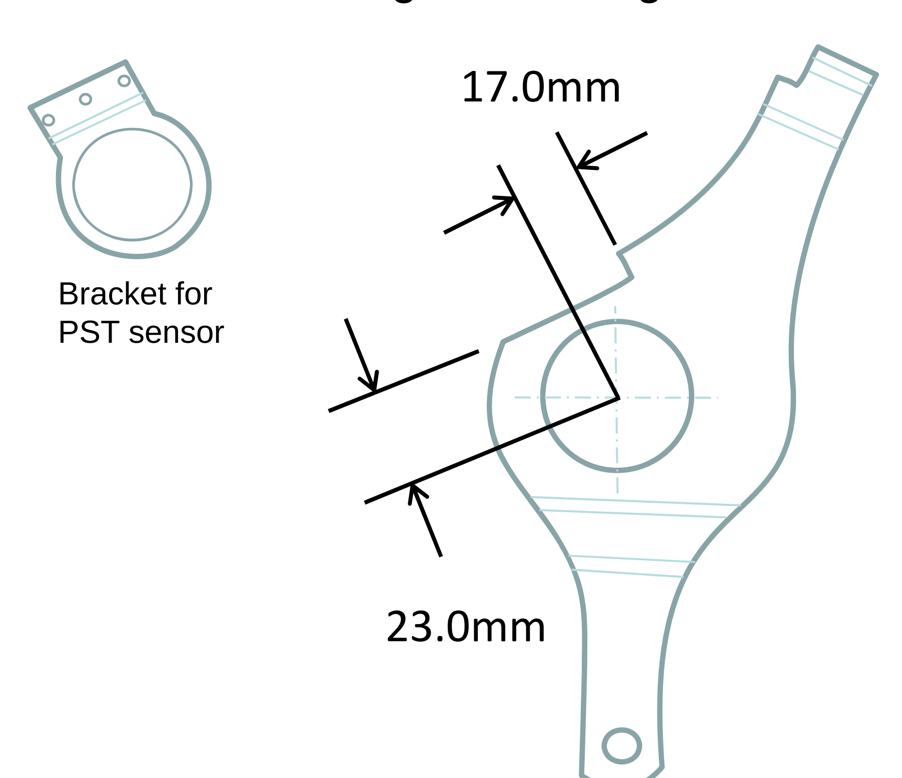
For internal cable routing, the dimensions of the frame opening should be as shown to ensure the connectors can be routed within the frame.

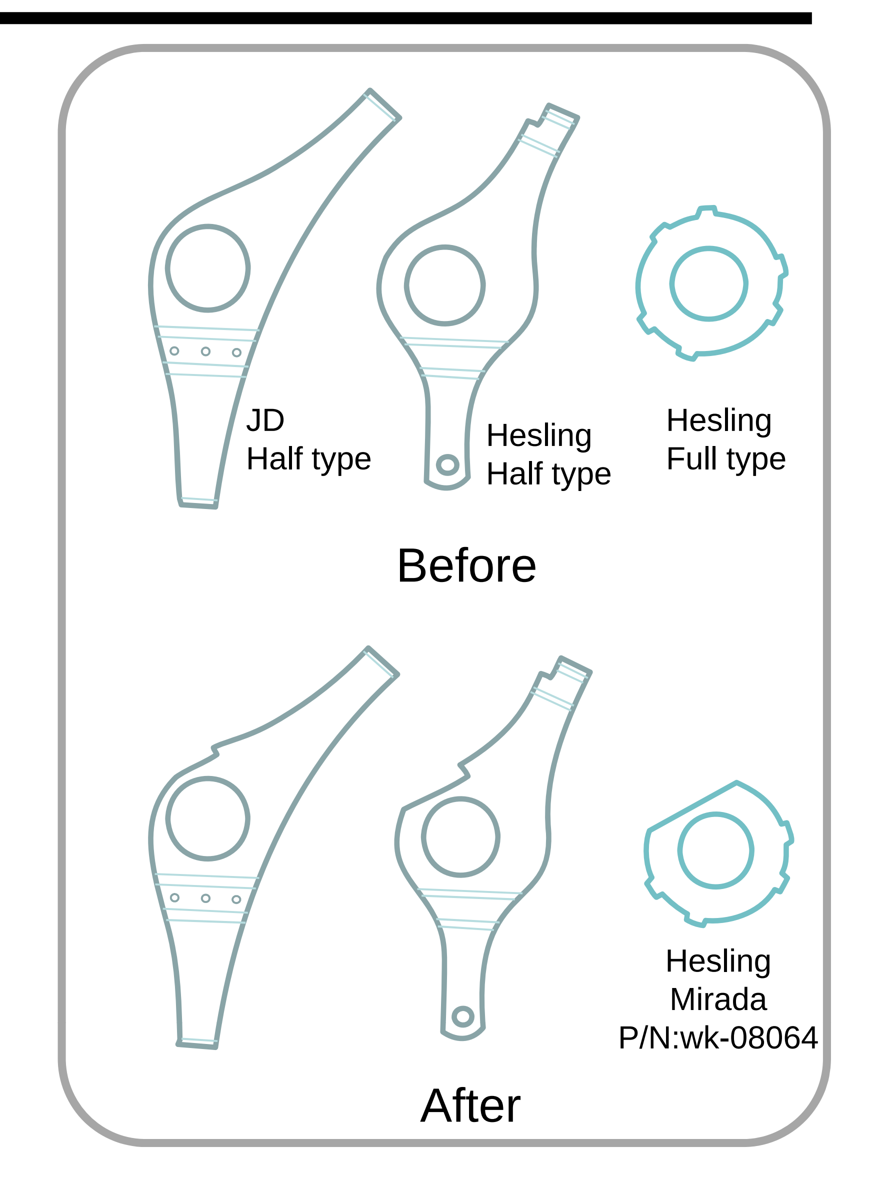


B.B. Bracket for Chain Cover

TranzX PST

In order for the TranzX PST bottom bracket sensor to be mounted, the bracket should be formed according to this diagram.



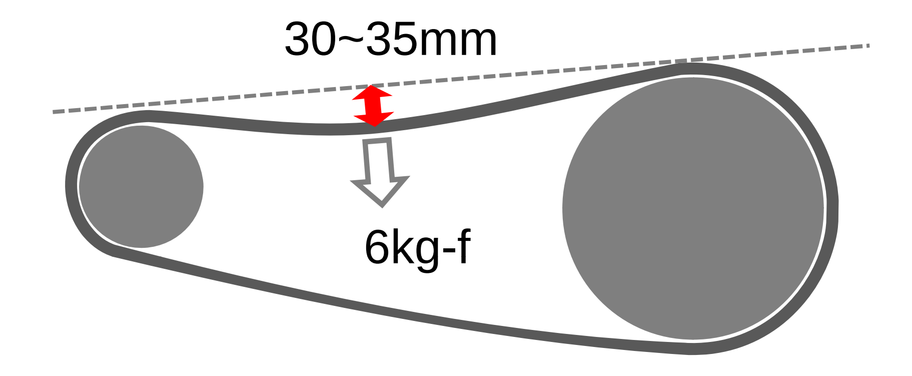


Chain tension

■ To activate the TMM4, the TranzX PST needs proper chain tension for the internal gear system.

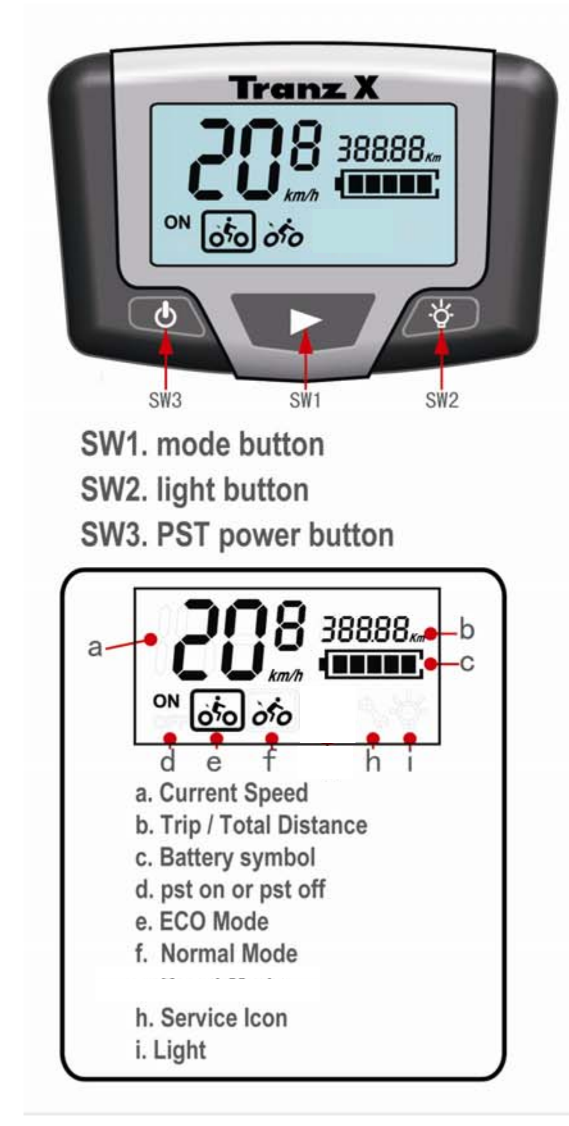
■ When the pressure applied on the chain is at 6kg-f, the chain movement should be in the 30~35mm range.

■ Meanwhile, please assure that the chain is not too loose to hit the chain cover or to fall out.



DP02 Operation Flow Chart

TranzX PST



OPERATION FLOW

PST on
(ECO Mode)
Push!
208 38888 Km km/h
ON

Normal Mode
Push!
ON

ECO Mode
Push!
ON

PST off
Push!
208 38888 Km km/h
OFF

SLEEP MODE

Light
Push!
ON

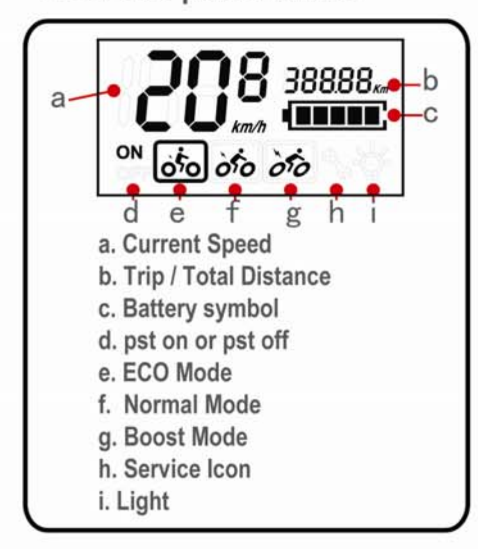
Service Icon
Error number
2 Error
ON

DP03 Operation Flow Chart

TranzX PST



SW1. mode button
SW2. light button
SW3. PST power button



OPERATION FLOW

PST on (ECO Mode)	Push!	208 38888 Km km/h ON
Normal Mode	Push!	ON
Boost Mode	Push!	ON
ECO Mode	Push!	ON
PST off	Push!	208 38888 Km km/h OFF
Light	Push!	ON

SLEEP MODE

Service Icon

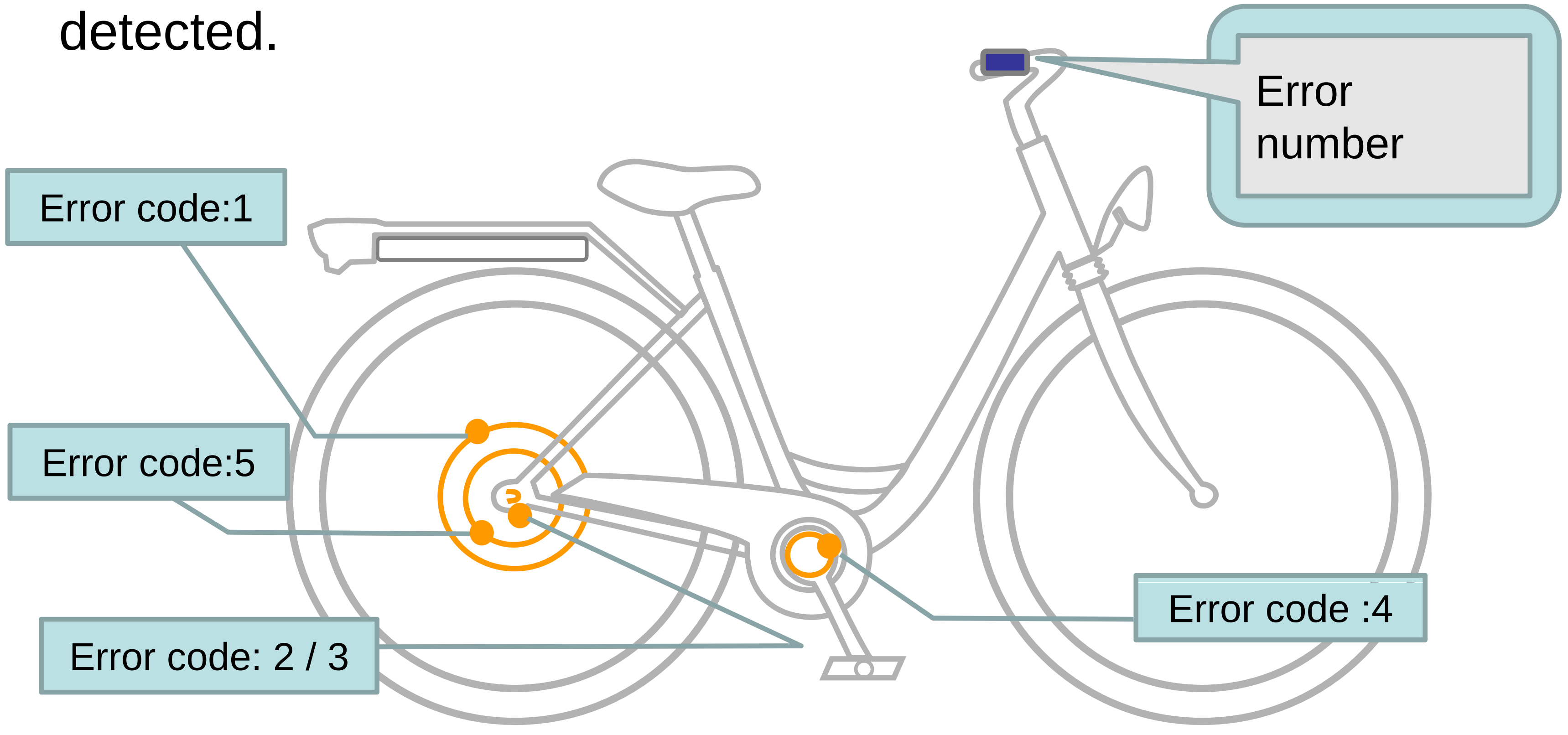
Error number

2 Error

ON

Dynamic Diagnostic System (DDS) TranzX PST

TranzX PST is designed to be easily repaired by dealers.
Error codes appear on the display when malfunctions are detected.



***DDS is valid for ver.1000 and later. Please contact your dealer for more information.**

DDS Error-code Message

Error Code	Malfunction/Description
1	Motor speed sensor is not functioning. The hub motor will vibrate and produce noise.
2	Broken circuit on TMM4. It would cause the TranzX PST to stop working.
3	Short circuit on TMM4. It would cause the TranzX PST to stop working.
4	RPM sensor on the bottom bracket is not functioning. The bike will have power only for 1-2 m and then stop.
5	The RPM sensor in the motor is malfunctioning. There will be power, however, the display does not indicate the current speed.
6	The brake lever cut off is not functioning.
Battery icon	When the battery icon is flashing, it means the power management system is not functioning.

***For all other problems not listed, please contact the TranzX PST Service Center at service@tranzxpst.com**